

## **Historic, archived document**

Do not assume content reflects current scientific knowledge, policies, or practices.



# United States Department of Agriculture,

BUREAU OF BIOLOGICAL SURVEY—Circular No. 57.

C. HART MERRIAM, Chief.

## BIRDS USEFUL IN THE WAR AGAINST THE COTTON BOLL WEEVIL.

By H. W. HENSHAW.

The main purpose of this circular is to direct the attention of cotton growers and others in the cotton-growing States to the importance of birds in the boll weevil war, to emphasize the need of protection for them, and to suggest means to increase the numbers and extend the range of certain of the more important kinds.

Investigations by the Biological Survey show that 38 species of birds eat boll weevils. While some eat them only sparingly others eat them freely, and no fewer than 47 adult weevils have been found in the stomach of a single cliff swallow. Of the birds known at the present time to feed on the weevil, among the most important are the orioles, nighthawk, and foremost of all the swallows (including the purple martin).

### ORIOLES.

Six kinds of orioles live in Texas, though but two inhabit the Southern States generally. Orioles are among the few birds that evince a decided preference for weevils, and as they persistently hunt for the insects on the bolls they fill a place occupied by no other birds. They are protected by law in nearly every State in the Union, but their bright plumage renders them among the most salable of birds for millinery purposes, and despite protective laws considerable numbers are still killed for the hat trade. It is hardly necessary to point out that their importance as insect eaters everywhere demands their protection, but more especially in the cotton belt.

### NIGHTHAWK.

The nighthawk, or bullbat, also renders important service in the destruction of weevils, and catches them on the wing in considerable numbers, especially during its migration. Unfortunately the nighthawk is eaten for food in some sections of the South, and considerable numbers are shot for this purpose. The bird's value for food, however, is infinitesimal as compared with the service it renders the cotton grower and other agriculturists, and every effort should be made to spread broadcast a knowledge of its usefulness as a weevil destroyer, with a view to its complete protection.

### SWALLOWS.

Of all the birds now known to destroy weevils swallows are the most important. Six species occur in Texas and the Southern States. The martin, the barn swallow, the bank swallow, the roughwing, and the cliff swallow breed locally in Texas, and all of them, except the



cliff swallow, breed in the other cotton States. The white-bellied, or tree swallow, nests only in the North, and by far the greater number of cliff swallows nest in the North and West.

*Barn swallow.*—The barn swallow is not as common in the South as it is in the North, apparently owing to the absence in the South of large barns in the interior of which it can find a congenial home. Wherever the barn swallow occurs its presence should be encouraged in every possible way.

The barn and cliff swallow, and for that matter all other birds, during nesting time are subject to parasites. Some of these look like bedbugs, and indeed are rather closely related to that very objectionable insect. Man, however, is safe from the attacks of these particular insects, since they live only on birds or in their nests and will soon perish apart from their normal hosts. Hence, no one need fear to encourage the presence of swallows under the eaves of houses and about barns.

*Roughwing.*—This swallow is common in the South, nesting in the crevices of rocky cliffs, in sand banks, holes in masonry and in abutments, under bridges, and in similar places. Protection is all this swallow needs to enable it to thrive and increase.

*Bank swallow; sand swallow.*—This bird in appearance and habits is so similar to the roughwing as often to be mistaken for it. It is common wherever it finds sand banks in which to dig holes for its nests. Unlike the roughwing, it usually builds in good-sized colonies, which, if protected from mischievous boys and destructive cats, will flourish. It is desirable to increase the number of colonies to the utmost extent, and in a region where sand and gravel banks abound this is easily done by cutting down the banks to make smooth faces good for nests and devoting them exclusively to the use of the swallows.

*Cliff swallow; mud dauber.*—Seventy-five or one hundred years ago this fine swallow was rare east of the Mississippi, being abundant only in the West, where abound suitable cliffs to which the bird attaches its mud nests. Within recent times, however, it has become numerous throughout the North, having discovered that the eaves of barns and outbuildings are satisfactory substitutes for cliffs. The species is already present in western and southern Texas, and, if protected and its presence encouraged, there would seem to be no reason why in time it should not extend its range over the entire cotton-growing area; but no practical method of hastening its occupancy of new territory has so far been suggested. In Germany the presence of a related species about dwellings is so much desired that artificial nests are made of clay or other suitable material and sold by dealers to be put up for the accommodation of swallows. Probably the same method would be found effective in this country.

*Martin.*—This, the largest and perhaps the most domestic of our swallows, occurs in summer here and there throughout the cotton States from Florida to Texas. Its large size, powerful flight, and the great numbers of insects (boll weevils among others) it requires for its own sustenance and that of its young make the martin the most valuable of its tribe to the southern planter; moreover, its habit of nesting in boxes provided for it renders its semidomestication comparatively easy, as its sociable disposition enables the

size of a colony to be increased by the addition of new quarters to practically the limit of the local food supply.<sup>a</sup>

Where martins occur sparingly it is not difficult substantially to increase the number of colonies simply by putting up additional boxes. As the settlement becomes populous, other boxes may be put up a mile or two away, and thus gradually the birds' range may be extended. It should not be forgotten that the nearer to the cotton fields the birds are the more weevils they will destroy.

In districts not visited at all by martins further steps must be taken to induce their presence. The practicability of transporting martin houses containing parent birds and their young from one locality to another has often been suggested, and in at least one instance has been tried with success.

The best time for the experiment is when the young martins are about two-thirds grown. To trap the birds in their house, doors are so arranged as to close the openings when a cord is pulled, which is done after the occupants are in for the night. If close to a railroad the captives may be transported many miles by train before daylight the next morning. However transported, the house containing a colony of say six or eight pairs of old birds with their young should be moved as quickly as possible to the selected locality and fixed to a pole already set up. The doors may be opened the following morning before daylight. Should the old birds when released refuse to feed their young and desert them to return to their old home, a result especially to be apprehended if the parent colony be only a few miles distant, the only recourse is to bring up the young by hand, feeding them worms, grasshoppers, cockroaches, crickets, mealworms, or other available insect food.

But should the old birds consent to remain in the new neighborhood and to rear their young the probability of the return of both old and young the following spring is great. Even if deserted by their parents and after being hand reared there is at least a fair degree of probability that the young will find their way back the following year to the place where raised and build in the houses provided for them. The practicability of this method of extending the range of the martin has yet to be tested by actual experiments on a large scale, but the value of the bird as an insect hunter, especially in the South, is so great as to fully justify the trouble and expense necessary to test the plan thoroughly.

The English sparrow is a formidable enemy of the martin, as it is of all swallows, and if a martin colony is to thrive determined efforts must be made to prevent this pest from ousting the rightful owners and appropriating their boxes. The smaller swallows are quite helpless to resist the attacks of the foreign invaders, and soon abandon their homes for more peaceable regions. But the martin is a good fighter, and would be able to hold its own against the spar-

---

<sup>a</sup> As showing how a colony of martins thrives when provided with sufficient room to multiply, an experiment by Mr. J. Warren Jacobs, of Waynesburg, Pa., may be cited. The first year five pairs were induced to occupy the single box provided, and raised eleven young. The fourth year three large boxes, divided into 99 rooms, contained 53 pairs, and they raised about 175 young. The colony was thus nearly 300 strong at the close of the fourth season. The effect of this number of hungry martins on the insects infesting the neighborhood may be imagined.



row hosts but for the fact that in its temporary absences the sparrows kill its young or throw out the eggs, so that sooner or later the martin has to give up the contest and abandon the neighborhood.

Martins are not at all fastidious about the outward appearance of their dwellings, and a large gourd suspended from the top of a dead tree or a pole, or any kind of a weather-tight box or barrel, however rude, when divided into compartments answers their needs as well as the most costly and ornamental house. The rooms should be about  $4\frac{1}{2}$  inches wide, 7 inches high, and 8 inches deep, with entrances about 3 inches in diameter. They will not build close to the ground, having a wholesome fear of cats and other invaders; hence the houses should be elevated from the ground not less than 15 feet. Drinking water is essential for martins and all other swallows, and the presence of a small pond, lake, or river greatly increases the chances for colonization.

From the standpoint of the farmer and the cotton grower, swallows are among the most useful birds. Especially designed by nature to capture insects in midair, their powers of flight and endurance are unexcelled, and in their own field they have no competitors. Their peculiar value to the cotton grower consists in the fact that, like the night hawk, they capture boll weevils when flying over the fields, which no other birds do. Flycatchers snap up the weevils near trees and shrubbery. Wrens hunt them out when concealed under bark or rubbish. Blackbirds catch them on the ground, as do the kildeer, titlark, meadow lark, and others; while orioles hunt for them on the bolls. But it is the peculiar function of swallows to catch the weevils as they are making long flights, leaving the cotton fields in search of hiding places in which to winter or entering them to continue their work of devastation.

Means have been taken to inform residents of the Northern States of the value of the swallow tribe to agriculturists generally, and particularly to cotton planters, in the belief that the number of swallows breeding in the North can be substantially increased. The cooperation of the Northern States is important, since birds bred in the North migrate directly through the Southern States in the fall on their way to the distant Tropics, and also in the spring on their return.

Important as it is to increase the number of northern breeding swallows, it is still more important to increase the number nesting in the South and to induce the birds there to extend their range over as much of the cotton area as possible. Nesting birds spend much more time in the South than migrants, and during the weeks when the old birds are feeding young they are almost incessantly engaged in the pursuit of insects.

It is not, of course, claimed that birds alone can stay the ravages of the cotton boll weevil in Texas, but they materially aid in checking the advance of the pest into the other cotton States. Important auxiliaries in destroying these insects, birds aid in reducing their numbers within safe limits and once within safe limits in keeping them there. Hence it is for the interests of the cotton States that special efforts be made to protect and care for the weevil-eating species and to increase their numbers in every way possible.